Date: Sat, 4 Sep 93 04:30:22 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V93 #31
To: Ham-Homebrew

Ham-Homebrew Digest   Sat, 4 Sep 93   Volume 93 : Issue   31

Today's Topics:

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

Date: Fri, 3 Sep 1993 19:31:34 GMT
From: usc!howland.reston.ans.net!darwin.sura.net!dtix.dt.navy.mil!relay-wo!relay!
csmoko@network.ucsd.edu
Subject: adding synthesed frequencies
To: ham-homebrew@ucsd.edu

I saw something on the net awhile ago about adding synthesed frequencies to a
crystal conrolled radio. Is the possible and how would I do it. The radio that
I have uses crystals in the 10-13 mhz range and operates in the 2 meter
commercial band.

thanks
--

| David W. Garvin, Jr. |
| KD4YWN   EMT-A |
| NSWCDD |
| Code L13U |
| Dahlgren, VA 22448-5000 |
| dgarvin@relay.nswc.navy.mil |
| (703) 663-6960   work |

Date: 3 Sep 93 15:45:02 EDT
From: psinntp!arrl.org@uunet.uu.net
Subject: Any interest in a DSP conference?
To: ham-homebrew@ucsd.edu

Some of us here at ARRL HQ have been discussing the idea of putting together a conference, probably for next year, on digital signal processing in Amateur Radio. This would be along the lines of the ARRL Digital Conference (nee Computer Networking Conference), but focussing on applications of DSP to ham radio.

I've little doubt that we could get people to attend a conference like that, but I'm not sure whether we could get people to submit papers for it. There's not much point in having a conference unless you have presentations! Since many of the possible DSP applications apply to digital communications, there may be some cross-over between the existing Digital Communications Conference and the proposed DSP conference, too.

So, I'm sounding the waters... are there folks out there who would be interested in submitting papers for such a conference? And are there any Amateur Radio organizations (clubs, etc) that would be interesting in hosting same? Or is this a dumb idea? Please let me know if you are interested.

Jon Bloom, KE3Z | jbloom@arrl.org
American Radio Relay League |
225 Main St., Newington CT 06111 |

Date: 3 Sep 93 21:21:20 GMT
From: ogicse!netnews.nwnet.net!news.clark.edu!spool.mu.edu!sdd.hp.com!hpscit.sc.hp.com!jeff@network.ucsd.edu
Subject: How do Vector Impedance Meters Work?
To: ham-homebrew@ucsd.edu

Gary Bishop (gb@dixie.cs.unc.edu) wrote:
: Can anyone point me to a reference that describes how commercial

: "vector impedance meters" work? I'm not interested in the traditional
: bridge circuits with variable components, but rather direct reading
: instruments. I can postulate multiple ways it *might* be done, but I
: suspect that there are methods that are not so obvious that result in
: better performance. I'm most interested in the circuitry for
: interface to the unknown load (thus making voltages and phases
: available for measurment).

: I intend to check out the Hewlett-Packard Journal in hopes of finding
: something there. Any other sources?

: Thanks
: gb wa4fut

If you can get your hands on a copy of "The Impedance Measurement
Handbook" (an HP publication), you'll find what you're looking for.
The HP literature number is 5950-3000.

Jeff
--
==========
Jeff Gruszynski
Semiconductor Test Equipment
Systems Engineer
Hewlett-Packard Company
==========
(415) or T 694-3381
jeff@hpmvd069.hp.com -or- jeff@hpmvd069.nsr.hp.com
jeff@hpuplca.hp.com
==========

Date: 3 Sep 93 09:58:51
From: concert!borg.cs.unc.edu!news_server!gb@decwrl.dec.com
Subject: How do Vector Impedance Meters Work?
To: ham-homebrew@ucsd.edu

Can anyone point me to a reference that describes how commercial
"vector impedance meters" work? I'm not interested in the traditional
bridge circuits with variable components, but rather direct reading
instruments. I can postulate multiple ways it *might* be done, but I
suspect that there are methods that are not so obvious that result in
better performance. I'm most interested in the circuitry for
interface to the unknown load (thus making voltages and phases
available for measurment).

I intend to check out the Hewlett-Packard Journal in hopes of finding
something there. Any other sources?

Thanks
gb wa4fut

Date: 2 Sep 93 16:22:49 EST
From: titan.ksc.nasa.gov!titan.ksc.nasa.gov!nntp@ames.arpa
Subject: Need-Interface for PC for CW
To: ham-homebrew@ucsd.edu

In article <1993Aug18.020929.24297@en.ecn.purdue.edu>, n9ljx@en.ecn.purdue.edu
(Scott A Stembaugh) says:
>
>In article <2069@arrl.org> mtracy@arrl.org (Michael Tracy) writes:
>>The ARRL Field Services BBS has a shareware program called HAMCOM21.ZIP
>>that serves as a terminal program for use with a very simple circuit.
>>The diagram of this circuit is contained in the program's online help.
>>The FSD BBS can be reached at: (203) 666-0578. The terminal settings are
>>the standard 8 bits, No parity, 1 stop bit (8N1) with baud rates up to 9600.
>
HAMCOMM2.2 can be found on oak.oakland.edu

The schematics given works great and only cost about $5 to build (took about an
hour).
I was able to decode W1AW code bulletin (at various speeds) and RTTY. This sure
beats buying a multimode TNC when one can't yet afford it. By the way it will
work
with any receiver as long as you have an output audio port (even my cheap $20
SONY receiver works).

Good luck.
Tom

Date: Fri, 3 Sep 93 16:40:38 GMT
From: mercury.hsi.com!a3bee2!cyphyn!randy@uunet.uu.net
Subject: OCTAL PLUGS NEEDED
To: ham-homebrew@ucsd.edu

ah ha! found you! via that cross post.

Also...re use of burned out tubes....reuse the bases...I've done that
to make plug in coils....epoxy glue the form onto out side of the base.

--
Randy KA1UNW If you get a shock while
servicing your equipment, "Works for me!"
DON'T JUMP! -Peter Keyes
You might break an expensive tube!

Date: Fri, 3 Sep 1993 17:16:03 GMT
From: swrinde!elroy.jpl.nasa.gov!usc!howland.reston.ans.net!math.ohio-state.edu!
hobbes.physics.uiowa.edu!news.uiowa.edu!icaen.uiowa.edu!drenze@network.ucsd.edu
Subject: PC-board layout utils for the Mac SE?
To: ham-homebrew@ucsd.edu

I'm trying to find any PC-board layout utils for the Mac SE. Preferrably
freeware/shareware, but if they're affordable commercialware, we can deal
with that.

TNX es 73 de Doug N0Y?? or N0Z??
02W 04D 23H 17M and counting...

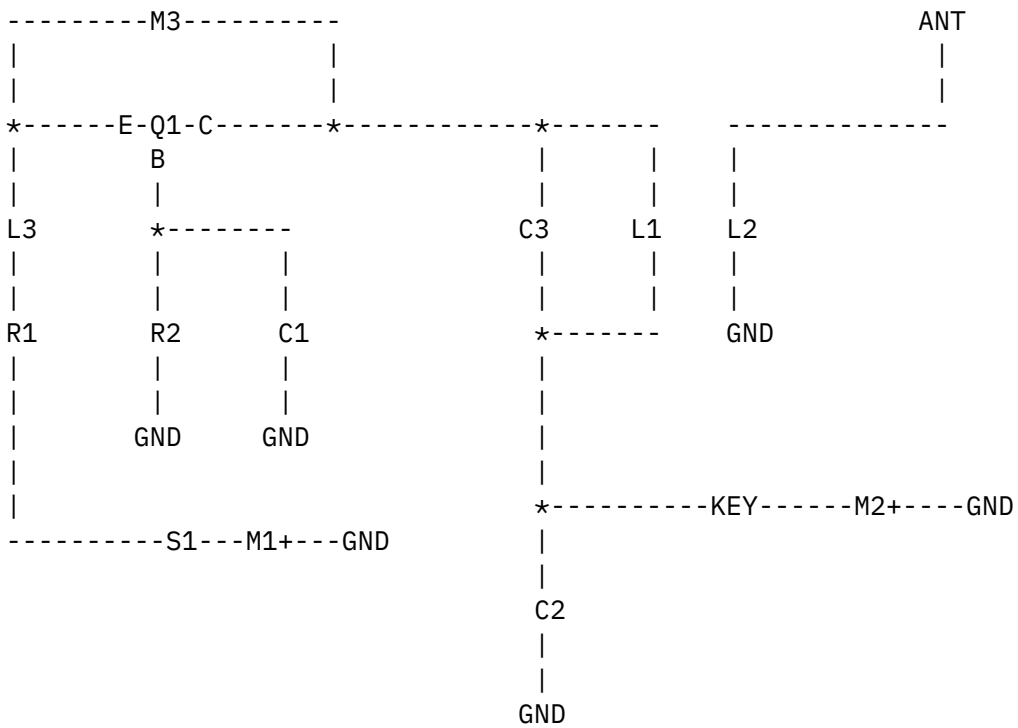
--
__ /| | Douglas J Renze | Charter Member, Popular Front
\'o.O' | +1 319 337 4664 | for Revolutionary Darwinism:
=(___)= | drenze@isca.uiowa.edu |
U | Douglas-Renze@uiowa.edu | Evolution Now!

Date: Wed, 1 Sep 1993 20:06:10 GMT
From: news.Hawaii.Edu!uhunix3.uhcc.Hawaii.Edu!jherman@ames.arpa
Subject: Project 6: 80M QRP `colorburst' CW xmtr
To: ham-homebrew@ucsd.edu

Gang,
In preparation for tomorrow's 80M QRP Colorburst Contest, here's a quick
80M xmtr you can throw together in 5 minutes; the 3579 kHz xtal comes,
naturally, from the colorburst oscillator board in your color TV (if you've
got a junked TV, or if you think TV only contains junk, yank the xtal out).
The rf output is not much - about 25 mw. Tuneup is simple: just bring a
field strength meter into vicinity of L1/L2 and tune L1 for peak deflection
of the meter. If you really want to get fancy, you can substitute a 100 pF
variable for C3 and optimize a bit further; this involves a bit of experi-
mentation to determine a `norm' setting for L1/L2. After this has been
established, all further tuning can be accomplished with C3.

Parts List:

C1   .047 mF capacitor
C2   .0015 mF
C3   100 pF
L1   18 turns of No.30 wire closewound on 3/8 in. diameter slug-tuned form
L2   5 turns of No. 30 closewound around middle of L1. Experiment with position of this coil over L1; in some circuits performance will be increased by moving L2 towards cold end of L1. Once exact position has been determined (with ant. hooked in and FSM for monitoring), glue in place.
L3   2.5 mH rf choke (National R-100 or equiv.)
M1   3 volt battery
M2   6 volt battery
M3   80 meter xtal
Q1   HEP-2 transistor
R1   330 ohm resistor
R2   27K resistor
S1   spst switch



Note the polarity of M1 and M2. Hope to hear some of you on the `official colorburst frequency' of 3579 kHz!

Jeff NH6IL

Jeffrey Herman, University of Hawaii Mathematics, jherman@Hawaii.Edu

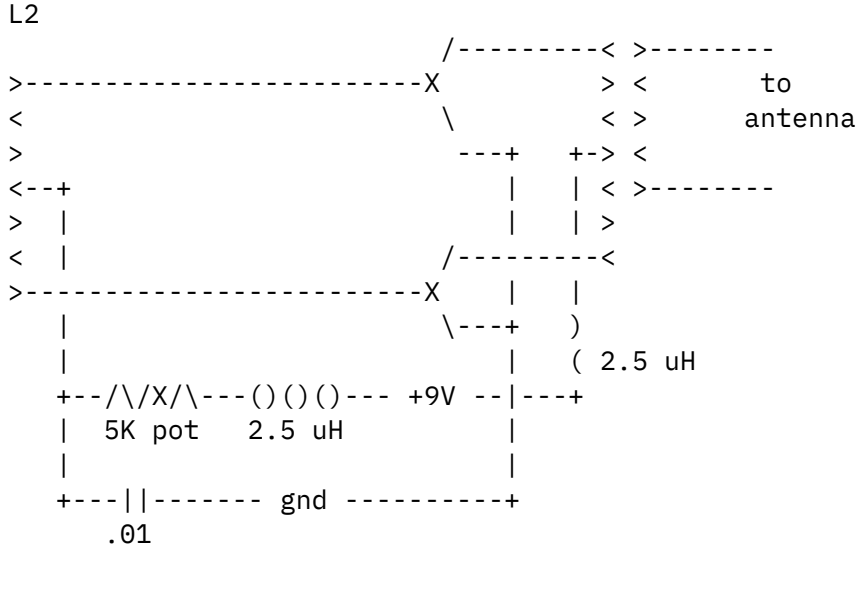
---

Date: 3 Sep 1993 18:46:35 GMT
From: news.larc.nasa.gov!grissom.larc.nasa.gov!kludge@uunet.uu.net
Subject: Project 6: 80M QRP `colorburst' CW xmtr
To: ham-homebrew@ucsd.edu

In article <CCoyIA.84K@news.Hawaii.Edu> jherman@uhunix3.uhcc.Hawaii.Edu (Jeff Herman) writes:
> In preparation for tomorrow's 80M QRP Colorburst Contest, here's a quick
>80M xmtr you can throw together in 5 minutes; the 3579 kHz xtal comes,
>naturally, from the colorburst oscillator board in your color TV (if you've
>got a junked TV, or if you think TV only contains junk, yank the xtal out).

I built the thing, and it worked but it put out much too little power to actually be useful. So, I built a linear amp for it.

First of all, instead of building L2 as diagrammed, I constructed it as 10 turns of #30 wire with a center tap, and used it to drive a pair of power transistors, like



Quick and dirty indeed. I used 2.5 uH chokes since I have a lot of them around, and also added a .1 MFD cap across the supply lines. Any RF leaking into the DC will cause feedback and nasty looking output. The number of turns on L2 that are required depends on the mu of the output transistors you use, and the number of turns on the output coil depend on the transistor as well. I found that 20 turns of #22 and 12 turns

of #22 was best for the primary and secondary of the output respectively,
but I have no clue what the transistors I was using really are... they
were pulled out of a TV set.

The bias is adjustable to accomodate different transistors. Tune to
10.737 MHz and adjust for the lowest level of third harmonic output.

If I were really intelligent, I would have just run it class C for
maximum output and stuck a harmonic trap on the output, but the entire
thing was designed and constructed in less than half an hour, so I leave
that to the next poster.
--scott
--
"C'est un Nagra. C'est suisse, et tres, tres precis."

Date: 3 Sep 93 11:39:28 GMT
From: sdd.hp.com!nigel.msen.com!spool.mu.edu!howland.reston.ans.net!xlink.net!
news.belwue.de!newsserv.zdv.uni-tuebingen.de!mailserv!cable01@network.ucsd.edu
Subject: solar modules needed
To: ham-homebrew@ucsd.edu

hey,
I'm looking for information about solar technology.
Are there any companies who produce solar power modules
of about 2 kW. Does anybody know if one can buy
low voltage refrigerators which work with solar energy.
I also need information about medical equipment which
works on solar technology. For example lamps, centrifuges or
other medical machines.
It would be nice to get some adresses of companies (worldwide)
or any other information (e.g.FAX-No.or Tel.No.).

thanks, Jochen
--

==
= Jochen Leipold -   University of Tuebingen - Dep. of Inorg. Chemistry II =
= (cable01@mailserv.zdv.uni-tuebingen.de)   - Germany -   =
==

Date: 3 Sep 93 15:56:30 GMT
From: ogicse!emory!kd4nc!ke4zv!gary@network.ucsd.edu
Subject: solar modules needed
To: ham-homebrew@ucsd.edu

In article <cable01.747056368@mailserv> cable01@mailserv.zdv.uni-tuebingen.de (Joachim Leipold) writes:
>hey,
>I'm looking for information about solar technology.
>Are there any companies who produce solar power modules
>of about 2 kW. Does anybody know if one can buy
>low voltage refrigerators which work with solar energy.
>I also need information about medical equipment which
>works on solar technology. For example lamps, centrifuges or
>other medical machines.
>It would be nice to get some adresses of companies (worldwide)
>or any other information (e.g.FAX-No.or Tel.No.).

I could direct you to one of the greener groups where you would
be directed to a granola munching company called Real Goods, but
in an effort to save you a bit of money, I'll point you instead
to a more nuts and volts company called Atlantic Solar Products.
Their address is

Atlantic Solar Products Inc.
9351 J Philadelphia Road
PO Box 770060
Baltimore Maryland 21237

Telephone 301-686-2500
Fax 301-686-6221
Toll free (in the US) 800-537-1566

They offer packaged PV systems of up to 19 kwh/week with peak power
delivery of 6 kw. Or they offer panels, regulators, batteries, inverters,
etc to custom tailor your own system. They also offer low voltage
refrigerators, pumps, lights, etc. In addition, they carry windmills,
multi-fuel generator sets, gas refrigerators, DC desktop computers,
and even a solar air conditioner.

Gary
--
Gary Coffman KE4ZV | "If 10% is good enough | gatech!wa4mei!ke4zv!gary
Destructive Testing Systems | for Jesus, it's good | uunet!rsiatl!ke4zv!gary
534 Shannon Way | enough for Uncle Sam."| emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244 | -Ray Stevens |

Date: Thu, 2 Sep 1993 16:59:04 GMT
From: netcomsv!netcom.com!wa2ise@decwrl.dec.com
Subject: TV SAP Audio channel decoder circuit wanted
To: ham-homebrew@ucsd.edu

In article <1993Sep2.150034.25627@ll.mit.edu> jordan@ll.mit.edu (Mike Jordan)
writes:
>
>I am looking for a circuit to decode the Second Audio
>channel that is sent out on some TV stations, and available
>on Stereo TVs & VCRs. Our local PBS affiliate is carrying
>the BBC World Service on the SAP channel, and I'd like to be
>able to hear it on something I can carry around the house.
>
>Is the SAP audio on an FM subcarrier like the SCA channel on some FM stations?
>If so, I've seen circuits using PLL chips (NE565) that look fairly simple.
>
I know the stereo
>difference signal is DBX encoded, but I'm not sure about the
>SAP stuff. For the usual BBC programme material (news &
>discussions) I don't care about hifi. (Its bound to be
>better than HF !)

The SAP is similar to SCA on FM radio, except that the audio is DBX
encoded, and the carrier is (I think) 5 times horizontal freq (about 78.6Khz)
 and that carrier is FM modulated.
If I remember rightly, DBX is similar to Dobly in that high audio freqs
are boosted during low volume periods. Rolling off the audio highs
will probably be good enough.

Date: 3 Sep 1993 23:10:07 GMT
From: usc!sdd.hp.com!col.hp.com!csn!news.sinet.slb.com!news.San-Jose.ate.slb.com!
jones@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <1993Aug26.171829.2600@cmkrnl.com>,
<30AUG199318465973@siva.bris.ac.uk>, <262keq$ncu@bigboote.WPI.EDU>
Subject : Re: What kits would you like to see?

Jonathan M Hill (jmhill@duck.WPI.EDU) wrote:
: Here is a project that I'd like to see, first a lead in introduction;

:   I read in a journal or two, fairly recently, reports of several companies
: that are planning to discontinue the manufacture and sales of discrete logic
: TTL chips. One article pointed out that such TTL logic chips are often used
: as, "glue" logic, which used to be implemented in dicrete chips. Such, "glue"
: logic today is often implemented in some form of logic gate array or other
: scheme. Gate arrays allows the functionality of many TTL chips to be programmed
: into a single chip.

:   If you look inside one of the early PCs, you will notice MASSES of TTL
: chips. A newer PC will have much fewer chips. Most of the TTL chips are
: replaced by a few gate array chips or application specific chips.

:   Gate arrays are a natural next step in logic integration, one form is the
: field programmable gate array(FPGA). Such a device, I would suppose, would be
programmed like an EPROM. Thus using PC software, a design is developed, then
: programmed into the gate array. A single gate array can replace many different
: TTL devices wired in a myriad of ways. Just think what this does to inventory!

:   So down to the projects; First of all, a simple FPGA programmer that would
: allow designs to be downloaded from a PC, or copied. Second, a software package
: to allow design development.

:   Jonathan/KA1WZN
:   jmhill@ee.wpi.edu

Three or four years ago, Popular Electronics (or was it Radio Electronics? I
can never keep the two straight) had a "PEEL" programmer that programmed
an electrically erasable "PAL". It was a kind of hoaky gadget, but it worked
(after I replaced the bad Z80 parallel chip). I did one design with it, which
essentially was a "traffic signal emulator" - along with a 555 timer, the
thing would cycle the "north-south" LED's through green (three pulses, as I
recall) then yellow, while holding "east-west" at red, then change north-south
to red and go through green and yellow on east-west. (It was a hardware
simulation of some software, believe it or not!)

Anyway, my big complaint was that the PEEL chips were essentially unobtainable.
So, if you do this, make sure you use a "standard" chip sold by somebody like
Digi-Key or JDR.

Also, please be sure to be able to use "erasable" or "reprogrammable" chips.
I had to reprogram the chip probably a dozen times before I got the code
right. (Since it was electrically erasable, it only took a fraction of
a second to erase, but I don't mind UV EPROM times.)

                              Clark
--
Disclaimer: The opinions expressed above are mine and not those of Schlumberger
because they are NOT covered by the patent agreement!

Phone: (602) 345-3638   Internet: jones@sj.ate.slb.com
Packet: N7RPQ@K7BUC.AZ.USA.NA   RF: N7RPQ/AA
Snail: Clark Jones, Schlumberger Technologies, 7855 S. River Pkwy #116, Tempe,
       AZ 85284-1825

End of Ham-Homebrew Digest V93 #31
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